



This project has received funding from the European Union's European Defence Fund - EDF programme under grant agreement No 101117731 [TIRESYAS]



## Technology Innovation for Radar European SYstem ApplicationS (TIRESYAS)

Under the European Defence Fund (EDF) 2022, the grant for the Research Action call on the topic 'Advanced radar technologies' was signed on 28 June 2024. The awarded project, called TIRESYAS, is led by Leonardo (Italy). The consortium encompasses a total of 29 participants from 11 countries. The project, which has a duration of 36 months, will receive an EU grant of roughly €15 million.

<b>Call EDF-2022-RA-SENS-ART - Information on the awarded project</b>	
<b>Name of the project</b>	Technology Innovation for Radar European SYstem ApplicationS
<b>Short name</b>	TIRESYAS
<b>Summary of the project</b>	
<p>The TIRESYAS project aims at counteracting challenging emerging threats and hypersonic missiles with increasing sensor resilience and sustainability. The project is in continuity and complements the project ARTURO (Advanced Radar Technologies in eUROpe) selected in the frame of the EDF call 2021. More specifically, TIRESYAS will:</p> <ol style="list-style-type: none"> <li>1. Develop new approaches to radar surveillance and target tracking through innovative System Manager algorithms able to combine multi-beam and pencil beam architectures.</li> <li>2. Explore solutions to address the need for intensive computation (signal and data processing) capabilities.</li> <li>3. Include the solution testing in simulated realistic scenarios allowing to work on new operational concepts and to optimize the sizing and design of the solutions.</li> <li>4. Explore innovative cooling techniques to reduce sensor SWaP (Size, Weight and Power) and enhance deployment versatility.</li> <li>5. Study and analyse innovative signal and data processing algorithms based on numerical simulations.</li> <li>6. Investigate adaptive digital cognitive beamforming (including TX phase) and target matched waveforms to be included in Software Define Radar architecture.</li> <li>7. Design on-board computing solutions with computational resource densities tens of times greater than today, while maintaining competitive programming and debugging environments.</li> <li>8. Explore CEMA (Cyber Electro Magnetic Activities) and threats and define algorithms that can be used to counter this threat.</li> <li>9. Study the application of 'secure by design' technologies to increase resilience to cyber-attacks.</li> <li>10. Study technology for sharing and distributing classified data from RF sensor systems.</li> <li>11. Enhance radar performance including potential use of photonic components.</li> <li>12. Perform trade-off studies to harmonize consolidated CONOPS (CONcept of OPerationS) and requirements with the new technologies and related integration into future systems operating in air, land and naval domains.</li> <li>13. Carry on trade-off studies for radar sensors to be integrated on multi-domain manned or unmanned systems/platforms sharing hardware and software solutions.</li> </ol>	



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<b>Project duration</b>		36 months	
<b>Starting date</b>		01 September 2024	
<b>Maximum foreseen EU Contribution</b>		€ 14,994,950.02	
<b>List of participants</b>			
#	Name of the entity	Country	EU Contribution requested by the entity <sup>1</sup>
1	LEONARDO - SOCIETA PER AZIONI	Italy	1,431,942.00 €
1.1	G.E.M. ELETTRONICA SRL	Italy	100,000.00 €
2	SAAB AKTIEBOLAG	Sweden	1,511,229.00 €
2.1	SAAB Finland Oy	Finland	338,000.00 €
3	THALES DMS FRANCE SAS	France	1,251,131.75 €
3.1	THALES LAS FRANCE SAS	France	469,856.00 €
3.2	THALES	France	298,868.25 €
4	INDRA SISTEMAS SA	Spain	1,620,739.64 €
5	HENSOLDT SENSORS GMBH	Germany	1,640,000.00 €
6	ECHOES SRL	Italy	100,000.00 €
7	SENTECH SRL	Italy	130,068.75 €
8	CONSORZIO NAZIONALE INTERUNIVERSITARIO PER LE TELECOMUNICAZIONI	Italy	250,625.00 €
9	RHEINMETALL ITALIA SPA	Italy	207,112.50 €
10	MBDA ITALIA SPA	Italy	394,630.00 €
11	AALTO KORKEAKOULUSAATIO SR	Finland	599,471.25 €
12	XY-SENSING SP. Z O.O	Poland	200,000.00 €
13	NEDERLANDSE ORGANISATIE VOOR TOEGEPAST NATUURWETENSCHAPPELIJK ONDERZOEK TNO	The Netherlands	800,000.00 €
14	THALES NEDERLAND BV	The Netherlands	300,430.00 €
15	SATWAYS-OLOKLIROMENES LYSEIS ASFALIAS KAI AMYNAS-IDIOTIKI EPICHEIRISI PAROCHIS YPIRESION ASFALIAS (IEPYA)-ETAIREIA PERIORISMENIS EFTHYNIS	Greece	200,000.00 €
16	BALTIJOS PAZANGIU TECHNOLOGIJU INSTITUTAS	Lithuania	200,000.00 €
17	AIRBUS DEFENCE AND SPACE GMBH	Germany	401,010.00 €
18	COREHW Semiconductor Oy	Finland	600,112.50 €
19	PIT-RADWAR S.A.	Poland	251,722.50 €
20	MARDUK TECHNOLOGIES OU	Estonia	200,000.00 €
21	TOTALFORSVARETS FORSKNINGSINSTITUT	Sweden	271,004.00 €

<sup>1</sup> The amount of EU contribution as included in the Grant Agreement. Final amounts need to be confirmed at the end of the project.



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22	FRAUNHOFER GESELLSCHAFT ZUR FORDERUNG DER ANGEWANDTEN FORSCHUNG EV	Germany	476,996.88 €
23	SAS UPMEM	France	100,000.00 €
24	UNIVERSITAT POLITECNICA DE VALENCIA	Spain	500,000.00 €
25	ELETTRONICA SPA	Italy	150,000.00 €